

CLAIMS

What is claimed is:

- 1 1. A magnetic write head, comprising:
 - 2 a first magnetic write pole having first and second ends;
 - 3 a magnetic pedestal formed over said first magnetic pole at said first end;
 - 4 a magnetic back gap layer formed over said first magnetic pole at said second
 - 5 end, said pedestal and said back gap having a distance therebetween;
 - 6 a non magnetic write gap material formed over said pedestal, extending toward
 - 7 said back gap and having a termination between said pedestal and said
 - 8 back gap; and
 - 9 a magnetic layer formed over said back gap, extending toward said
 - 10 pedestal and terminating at said termination of said write gap material.
- 1 2. A magnetic write head as in claim 1, wherein said write gap material layer
- 2 extends less than half said distance between said pedestal and said write gap.
- 1 3. A magnetic write head as in claim 1 wherein said write gap material layer extends
- 2 less than 20 percent said distance between said pedestal and said back gap.
- 1 4. A magnetic head as in claim 1, wherein said write gap material is Rh.
- 1 5. A magnetic head as in claim 1, wherein said magnetic layer is NiFe.

1 6 A magnetic head as in claim 1, further comprising a second magnetic pole
2 extending from said back gap layer to said pedestal, said second pole being
3 magnetically connected with said back gap and being separated from said pedestal
4 by said write gap material.

1 7. A magnetic write head, comprising:
2 a first magnetic write pole having first and second ends;
3 a first magnetic pedestal formed over said first magnetic pole at said first end;
4 a first magnetic back gap layer formed over said first magnetic pole at said second
5 end, said pedestal and said back gap having a distance therebetween;
6 a first material formed over said pedestal, said first material being electrically
7 conductive and non-magnetic;
8 a second material formed over said back gap, said second material being
9 electrically conductive and magnetic and being a different material than
10 said first material;
11 a second pedestal formed over said first material layer over said first pedestal;
12 a second back layer formed over said second material layer over said back gap;
13 and
14 a magnetic pole extending between and magnetically connecting said second
15 pedestal and said second back gap layer.

1 8. A magnetic head as in claim 1, wherein said non-magnetic write gap material
2 comprises less than 50% of an area of said head.

1 9. A magnetic head as in claim 1, wherein said non-magnetic write gap material
2 comprises less than 20% of said head.

1 10. A method of constructing a magnetic write head, comprising:
2 providing a first magnetic pole;
3 forming a first magnetic pedestal over said first magnetic pole;
4 forming a magnetic back gap layer over said first magnetic pole, said first
5 magnetic pedestal and said back gap layer being separated by a distance;
6 depositing a non-magnetic metal layer;
7 forming a mask over said first pedestal;
8 performing an material removal process to remove portions of said non magnetic
9 metal layer not covered by said mask; and
10 depositing a magnetic layer.

1 11. A method as in claim 10 wherein said material removal process comprises ion
2 milling.

1 12. A method as in claim 10 wherein said mask extends beyond said pedestal in said
2 direction of said back gap and terminates less than half said distance between said
3 pedestal and said back gap.

1 13. A method as in claim 10 wherein said mask extends beyond said pedestal in said
2 direction of said back gap and terminates less than 20 percent of said distance
3 between said pedestal and said back tap.

1 14. A method as in claim 10 wherein said non-magnetic material comprises Rh.

1 15. A method as in claim 10 wherein said magnetic material comprises NiFe.

1 16. A method as in claim 10 wherein said mask is a bilayer photoresist mask.

1 17. A method as in claim 10 further comprising forming a second magnetic pole over
2 at least a portion of said non-magnetic layer and said magnetic layer.

1 18. A method as in claim 10 wherein said magnetic layer and said non-magnetic
2 metal layer have substantially the same thickness.

1 19. A method as in claim 10 wherein said magnetic layer has a thickness substantially
2 the same as said non-magnetic metal layer, within plus or minus 50 percent.

1 20. A method as in claim 10 further comprising:
2 forming a second pedestal over said first pedestal and separated from said first
3 pedestal by said non-magnetic metal layer;

4 forming a back magnetic layer over said back gap layer, said back magnetic layer
5 being magnetically connected to said back gap layer through said
6 magnetic layer, and
7 forming a second pole, magnetically connected to said second magnetic pedestal
8 and said back magnetic pedestal.

1 21. A magnetic head as in claim 10, wherein said mask covers an area less than 50%
2 of said magnetic head.

1 22. A magnetic head as in claim 10, wherein said mask covers an area less than 20%
2 of said magnetic head.